

**REMARKS**

Claims 12-16, 18, 23, 25-30, 31, 37, and 39-44 remain pending in the present application. Reconsideration of the application is respectfully requested in view of the following responsive remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

In the office action of June 10, 2009, the following actions were taken:

(1) Claims 13-14 and 27-28 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement;

(2) Claims 12-13, 15-16, 23, 25-27, 29-30, 37, and 39-44 were rejected under 35 U.S.C. § 102(c) as being anticipated by U.S. Publication No. 2004/0063807 to Wang et al. (hereinafter "Wang") in view of evidence given in *Hawley's Condensed Chemical Dictionary*;

(3) Claims 12-16, 23, 25-30, 37, and 39-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of evidence given in *Hawley's Condensed Chemical Dictionary*;

(4) Claims 12-16, 18, 23, 25-30, 32, 37, and 39-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of U.S. Publication No. 2004/0229974 to Miyabayashi (hereinafter "Miyabayashi");

(5) Claims 12-15, 18, 23, 25-29, 32, 37, and 39-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Publication No. 2003/0069329 of Kubota et al. (hereinafter "Kubota") in view of *Hawley's Condensed Chemical Dictionary* and either U.S. Patent No. 6,536,890 to Kato et al. (hereinafter "Kato") or U.S. Patent No. 5,207,824 to Moffatt et al. (hereinafter "Moffatt"); and

(6) Claims 12-16, 18, 23, 25-30, 32, 37, and 39-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota in view of *Hawley's Condensed Chemical Dictionary* and either Kato and Moffatt and further in view of U.S. Patent Publication No. 2004/0055508 of Miyamoto et al. (hereinafter "Miyamoto") or Wang.

It is respectfully submitted that the presently pending claims be examined and allowed.

**Rejection under 35 U.S.C. § 112**

*(1) Claims 13-14 and 27-28 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement*

The Examiner has rejected claims 13-14 and 27-28 as failing to comply with the written description requirement. Specifically, the Examiner has alleged that the presently recited ranges in the claims contain a newly recited endpoint. Further, the Examiner appears to allege that even though the support cited by the Applicant contains the endpoint, the endpoint is not disclosed in regard to the instantly claimed non-volatile co-solvent.

The Applicant respectfully disagrees. The Applicant explicitly addressed this issue in Applicant's specification by defining all ranges and sub-ranges. Specifically, the specification defines all ranges to include all sub-ranges (and uses 0.1 wt% as an endpoint in one example). Page 6, lines 3-8. Further, the specification applies the above sub-ranges to ranges reciting one numerical value, stating "[f]or example, a range recited as 'less than 5 wt%' should be interpreted to include all values and sub-ranges between 0 wt% and 5 wt%." Page 6, lines 10-11. As such, the Applicant submits that the present specification disclosed the present recited ranges of claims 13-14 and 27-28 in such a way as to reasonably convey to one skilled in the relevant art that the present inventors, at the time the application was filed, had possession of the claimed invention.

In light of the above, the Applicant submits that the present claims are fully supported by the specification, and requests that the Examiner withdraw the present rejection.

**Rejection under 35 U.S.C. § 102**

The Examiner has rejected claims 12-13, 15-16, 23, 25-27, 29-30, 37, and 39-44 under 35 U.S.C. 102 over Wang. Before discussing the rejection, it is thought proper to briefly state what is required to sustain such a rejection. It is well settled that "[a] claim is anticipated only if each and every element as set forth in the claims is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 2 U.S.P.Q. 2d 1051, 1053 (Fed. Cir. 1987). In

order to establish anticipation under 35 U.S.C. 102, all elements of the claim must be found in a single reference. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 231 U.S.P.Q. 81, 90 (Fed. Cir. 1986), *cert. denied* 107 S.Ct. 1606 (1987). In particular, as pointed out by the court in *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1981), *cert denied*, 469 U.S. 851 (1984), "anticipation requires that each and every element of the claimed invention be disclosed in a prior art reference." "The identical invention must be shown in as complete detail as is contained in the...claim." *Richardson v. Suzuki Motor Co.* 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989). As the Examiner has rejected the aforementioned claims over Wang, a brief discussion of this reference is provided.

*(2) Claims 12-13, 15-16, 23, 25-27, 29-30, 37, and 39-44 were rejected under 35 U.S.C. § 102(e) as being anticipated by Wang in view of evidence given in Hawley's Condensed Chemical Dictionary*

Wang discloses an aqueous ink-jet ink including a pigment, a polymer latex having at least one halogenated vinyl monomer, a surfactant and a humectant. An ink and receiver combination for a non-absorbing substrate is also provided. See Abstract. Although Wang states that the pigment can be self-dispersible, encapsulated, or stabilized by a dispersant, only pigments stabilized by a separate dispersant are exemplified. See [0023] and Examples [0056-0085]. Additionally, of the 27 types of pigments listed in paragraph [0029], no encapsulated pigments are listed, and of the 287 explicitly identified individual pigments, it does not appear that encapsulated pigments are listed. See [0029]. It is also worthy to note that not a single acid monomer containing latex appears to be exemplified. See Examples [0056-0085]. Thus, the specific combination of a polymer-encapsulated pigment with an acid monomer-containing latex appears nowhere in Wang.

Independent claims 12 and 26, from which claims 12-17, 23, 25-31, 37, and 39-40 depend, require that the latex includes surface acid groups provided by "acid monomers being present from 1 wt% to 15 wt%" of the latex. The Examiner has alleged that this limitation is taught since Wang discloses that the polymer latex contain less than 50 mol % of a hydrophilic monomer such as methacrylic acid. However, Wang teaches a certain

mol % of hydrophilic monomers, as opposed to the present invention which recites 1 wt% to 15 wt% of an acidic monomer containing latex. Specifically, Wang explicitly lists 26 hydrophilic monomers, of which only 4 are acidic. See [0043]. Thus, there appears to be no teaching in Wang that recognizes the difference between acidic monomers and merely hydrophilic monomers, nor is there any teaching in Wang that would lead one skilled in the art to select a specific weight percentage of acidic monomers over other non-acidic monomers, and then use the latex formed therefrom in combination with polymer-encapsulated pigments (which are not discussed in any detail other than to briefly mention their possible use).

Because this specific combination is not taught in the reference, the rejection relies on inherency rather than a direct teaching for the claimed combination, as such, it is notable that in order to establish inherency, extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Even if a prior art reference is capable of being modified and the modification would anticipate the invention, this is not sufficient to support an anticipation rejection based on inherency. In other words, it appears that the Examiner is arguing that this combination is inherent in the reference, because encapsulated pigments are mentioned in passing, and in a separate place, 4 of 26 hydrophilic monomers that can be used in a polymer are acidic.

As the rejection is particularly relying on this doctrine, the Applicant wishes to provide the applicable case law. Specifically, the Federal Circuit Court of Appeals stated “[u]nder the doctrine of inherency, if an element is not expressly disclosed in a prior art reference, the reference will still be deemed to anticipate a subsequent claim if the missing element ‘is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill’” (citations omitted). Rosco, Inc. v. Mirror Lite Co., 304 F.3d 1373, 1380 (Fed. Cir. 2002). The Court further states that “[i]nherent anticipation requires that the missing descriptive material is “necessarily present,” not merely probably or possibly present, in the prior art” (citations omitted). Id. As such, the Applicant submits that the appropriate standard in establishing an

anticipatory rejection through inherency has been well defined by the courts, and has not been met in the present case.

The fact that Wang explicitly teaches hydrophilic monomers would not necessarily require them to be acidic, nor would one skilled in the art recognize such a limitation. Also, the Applicant contends that to combine the elements as proposed in the rejection would be a modification of the teachings of Wang as Wang does not explicitly teach the use of acidic monomers or provide an example of such, particularly in combination with the other elements described above. Furthermore, the Applicant submits that, until the Patent Office establishes each and every element, the burden does not shift to the Applicant, as a *prima facie* case has not been established.

Specifically, the Patent Office has not provided the present combination of elements. For example, even though Wang generally discloses different types of pigments, including self-dispersed, encapsulated, and dispersed, can be used in its invention, Wang explicitly lists types of pigments and specific individual pigments in paragraph [0029] of the specification. Notably missing from paragraph [0029] is any reference to an encapsulated pigment. Additionally, Wang provides no examples of inks containing encapsulated pigments. As such, the Examiner is picking and choosing discrete briefly mentioned possibilities and combining them in a manner not specifically taught by Wang. In other words, the combination of an encapsulated pigment and an acid monomer-containing polymer is an element itself, and this specific combination is not taught by the reference. The Applicant notes that providing the elements is not sufficient to sustain the rejection, but the Patent Office must show the identical invention in as complete detail (per *Richardson v. Suzuki Motor Co.*) as is contained in the claim. Since this combination has not been shown by the reference, the Applicant submits that the Patent Office has not met this standard.

The Examiner has responded to the above arguments arguing that the Examiner has not relied upon inherency; rather the Examiner argues that Wang teaches the elements in enough specificity to anticipate the present invention. See Final Office Action of April 17, 2008, page 4. However, such an argument would then necessarily equate the hydrophilic monomers disclosed in Wang as acidic monomers. There is no

reason to pick acid functionalized polymers over mere hydrophilic monomers by reading the reference, and there is no teaching that would lead one skilled in the art to select this specific type of pigment and combine it with this specific type of polymer colloid. The Applicant submits that such a reading is inconsistent with the disclosure in Wang, as discussed above. There is absolutely no teaching or disclosure in Wang that provides the present combination of elements in as complete detail as contained in the present claims. In other words, the Applicant submits that it is not enough for the rejection to identify elements in a single reference where such elements are merely found in laundry list of components, rather the rejection must show the invention in as complete detail as found in the claims. Stated another way, the Applicant freely admits that polymer encapsulated pigments and acid-functionalized polymer colloid particulates existed prior to the filing of the present application. It is the combination of these two elements, in combination with a thermal ink-jet printhead and non-porous media that is claimed here. This combination is nowhere in Wang.

The Examiner and Applicant agree that that the reference need not necessarily exemplify the invention to be anticipatory; however, the Applicant submits that the reference still must show the identical invention in as complete detail (per *Richardson v. Suzuki Motor Co.*) as is contained in the claim. The Applicant respectfully submits, however, that Wang does not only fail to teach this combination by example, but furthermore, Wang does not teach or disclose this combination in any other form; i.e., text, table, figure, general description, etc. As such, the Applicant respectfully requests that the Examiner withdraw the rejection.

The Applicant notes that the Examiner has also argued that as the disclosed list of hydrophilic monomers is small and that as the acidic monomers are listed first, the Examiner is of the opinion that the present invention is disclosed in sufficient specificity as to anticipate the present claims. The Applicant respectfully disagrees. The Applicant maintains the position that Wang contains no understanding of the present invention, does not teach the present configuration in any way, and that the Examiner is merely picking and choosing the specific elements of Applicant's invention based upon the Applicant's disclosure, not from any teaching or disclosure from the cited art.

Additionally, the Applicant notes that the Examiner has argued that Wang teaches encapsulated pigments, and even alleges that at least one-third of Wang's pigments are encapsulated. The Applicant respectfully disagrees. The Applicant notes that [0023] states:

The pigment used in the present invention can be either self-dispersible such as those described in U.S. Pat. No. 5,630,868, encapsulated as those described in the pending U.S. patent application Ser. No. 09/822,723, filed Mar. 30, 2001, or can be stabilized by a dispersant. The process of preparing inks from pigments commonly involves two steps: (a) a dispersing or milling step to break up the pigment to the primary particle, and (b) dilution step in which the dispersed pigment concentrate is diluted with a carrier and other addenda to a working strength ink. In the milling step, the pigment is usually suspended in a carrier (typically the same carrier as that in the finished ink) along with rigid, inert milling media. Mechanical energy is supplied to this pigment dispersion, and the collisions between the milling media and the pigment cause the pigment to deaggregate into its primary particles. A dispersant or stabilizer, or both, is commonly added to the pigment dispersion to facilitate the deaggregation of the raw pigment, to maintain colloidal particle stability, and to retard particle reagglomeration and settling.

In light of this passage, the Applicant notes that the mere use of milling does not equate to encapsulation as alleged by the Examiner. Further, the Applicant submits that Wang does not differentiate between any of the 3 types of pigments or provide any disclosure as to the use of one type of pigment over the other. As consistently argued throughout the prosecution, the Applicant maintains that Wang does not provide sufficient specificity to anticipate the present invention.

Claims 41-44 address density and surface dielectric properties of the acid-functionalized polymer colloid particulates. The Examiner has dismissed these claim elements alleging that they appear typical or would be necessary and inherent. However, such unsubstantiated allegations are not a substitute for prior art or other evidence

necessary to establish anticipation. The Applicant submits that these claim elements necessarily limit the scope of the independent claims from which they depend.

As with the rejection of claims 12-13, 15-16, 23, 25-27, 29-30, 37, and 39-40 discussed above, the rejection of claims 41-44 relies on inherency rather than a direct teaching for the claimed combination, as such, it is notable that in order to establish inherency, extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Even if a prior art reference is capable of being modified and the modification would anticipate the invention, this is not sufficient to support an anticipation rejection based on inherency. Case law regarding inherency is outlined in the section immediately above and is incorporated herein.

The Applicant contends that the claim elements are not inherent in the teachings of Wang. Rather, the claim elements further limit the types of particulates covered by the claim and would necessarily exclude any particulate that does not contain the recited density or surface dielectric constant. Given the relatively large number of potential particles that would otherwise be covered by the independent claims, such a restriction is meaningful and limiting, and would necessarily disclaim most particles not meeting the recited limitations. Thus, this limitation should not be viewed as inherent, but rather, as a significant limitation on the claims which has not been shown by the prior art. As such, the Applicant respectfully requests that the Examiner withdraw the rejection to these claims.

#### **Rejections Under 35 U.S.C. § 103**

The Examiner has rejected claims 12-16, 18, 23, 25-30, 32, 37, and 39-44 as being obvious in view of several references. Before discussing the obviousness rejections herein, it is thought proper to briefly state what is required to sustain such a rejection. The issue under § 103 is whether the PTO has stated a case of *prima facie* obviousness. The Applicant does not deem it necessary to recite the entire case law standard required in order to establish a *prima facie* case of obviousness. However, the Applicant would like to briefly remind the Examiner that a *prima facie* case of



obviousness generally includes establishing 1) that the asserted references as modified or combined teach or suggest each and every element of the claimed invention, 2) that the asserted references as modified or combined provide a sufficient likelihood of successfully making the modification or combination, and 3) a reason for the modification or combination asserted.

Additionally, under *KSR*, and as outlined under the MPEP § 2143, additional rationales include (a) combining prior art elements according to known methods to yield predictable results; (b) simple substitution of one known element for another to obtain predictable results; (c) use of known technique to improve similar devices (methods, or products) in the same way; (d) applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; (e) "obvious to try" - choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; (f) known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art; and (g) some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

The Applicant respectfully asserts the Examiner has not satisfied the requirement for establishing a case of *prima facie* obviousness in any of the rejections. As the Examiner has rejected the aforementioned claims over two primary references, a brief discussion of these references is provided, see Wang above and Kubota below. Additionally, two secondary references relied on by the Examiner are also briefly discussed.

(3) *Claims 12-16, 23, 25-30, 37, and 39-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of evidence given in Hawley's Condensed Chemical Dictionary*

The Examiner has rejected claims 12-16, 23, 25-30, 37, and 39-44 over Wang in view of evidence given in *Hawley's Condensed Chemical Dictionary*. The Applicant

submits that the rejection provides no reason why a person skilled in the art would pick and choose a certain pigment with a certain latex containing an acidic monomer from the present combination of references since the references are absolutely devoid of any teachings or disclosure regarding the specific combination as presently claimed. For example, there is no teaching or disclosure in the reference or in the art in general that would lead one skilled in the art to choose a latex with an acidic monomer of 1 wt% to 15 wt% with a polymer-encapsulated pigment.

The rejection fails to provide a reason why a person skilled in the art would make such a combination, which simply fails to support a *prima facie* case of obviousness. Furthermore, the Applicant submits that reasons of achieving good rub resistance, good waterfastness, lightfastness, abrasion resistance, good adhesion to non-absorbing substrates, or any other quality disclosed in Wang, could not be a reason to combine a latex monomer with an acidic monomer of 1 wt% to 15 wt% with an encapsulated pigment since Wang already claims to accomplish this with non-acidic latexes and non-encapsulated pigments.

The Applicant also submits that the rejection is based on improper hindsight to reconstruct the instantly claimed invention while using the Applicant's specification as a roadmap. The court has stated that an Applicant's specification cannot be the basis for motivation, i.e., no hindsight reconstruction. Specifically, the court in McNeil-PPC, Inc. v. Perrigo Co., 516 F. Supp. 2d 238, 248 (S.D.N.Y. 2007), affirmed that

the claimed invention as a whole must be compared to the prior art as a whole, Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1383 (Fed. Cir. 1986); Hodosh v. Block Drug Co., 786 F.2d 1136, 1143 n.5 (Fed. Cir. 1986), and courts must avoid aggregating pieces of prior art through hindsight which would not have been combined absent the inventors' insight, KSR, 127 S. Ct. 1727, [WL] at \*16.

Accordingly, if a prior art reference is sought to provide a specific element of a claim with the use of hindsight, any rejection based thereon is improper and should be withdrawn. The Applicant submits that without the present inventor's insight, the present systems and methods were not known; i.e., the rejection selectively picks and chooses single elements in an attempt to combine them as presently outlined in the instant disclosure without any apparent reason why one skilled in the art would attempt to

combine the elements in the manner presently indicated. Furthermore, the Applicant submits that there is no reason generally known in the art or provided in the cited references that would direct someone to provide the present combination.

Additionally, the Applicant submits that the present rejection does not teach each and every element as recited in claims 41-44; i.e., density and surface dielectric constants. The rejection relies upon inherency in providing these elements. However, such reliance is misplaced based on the current case law regarding the use of inherency in establishing a proper § 103 rejection. Specifically, in *In re Rijckaert*, the Court concluded that even though the Board had found that a certain condition was known to be optimal, the Court concluded that the condition was not necessarily inherent and overturned the 103 rejections based on such inherency. 9 F.3d 1531, 1533-34 (Fed. Cir. 1993). Specifically, the Court provided several inherency standards applicable to obviousness, including:

“[t]he mere fact that a certain thing may result from a given set of circumstances is not sufficient [to establish inherency.]” *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981) (citations omitted). “That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown.” *In re Spormann*, 53 C.C.P.A. 1375, 363 F.2d 444, 448, 150 USPQ 449, 452 (CCPA 1966). Such a retrospective view of inherency is not a substitute for some teaching or suggestion supporting an obviousness rejection. See *In re Newell*, 891 F.2d 899, 901, 13 USPQ2d 1248, 1250 (Fed. Cir. 1989).

As applied to the present case, the mere fact that the present particulates may result from the materials found in Wang is not enough to establish inherency. Additionally, and for argument’s sake, even if the present combination may be inherent from Wang’s description, the present combination of materials was not known. As found in *In re Newell*, the Examiner’s retrospective view in the present case does not establish a *prima facie* case of obviousness as the presently recited elements are not necessarily inherent or qualify as inherent under the current case law regarding obviousness. Furthermore, the Applicant submits that as a *prima facie* case of obviousness has not

been established, the burden has not shifted to the Applicant, but remains with the Patent Office until such a *prima facie* case is properly established.

The Patent Office has responded to the above arguments, alleging that the Examiner is not relying on inherency. See Final Office Action of April 17, 2008, page 8. Absent inherency or any disclosure regarding the elements of density and surface dielectric constants, the Applicant submits that the Examiner has not provided a combination of references that teach each and every element of those claims.

Even though the Examiner has contended that inherency is not relied upon, the Applicant notes that the Examiner has further argued that these elements are “necessarily inherent” and “[t]he argued parameters are things which are not typically mentioned in the prior art nor measured.” See Office Action of April 17, 2008, page 8. The Applicant understands this reasoning to rely on inherency of the noted parameters, and is contradictory to the Examiner’s claim of not relying on inherency. In other words, the Examiner is arguing that these parameters are inherently present. As such, the inherency case law previously cited by the Applicant is material to the present rejection. Furthermore, as discussed above, the Applicant contends that the Patent Office has not met the inherency standard for establishing a proper 103 rejection. It is noted that if inherency is relied upon, the Applicant wants to make it clear that there are many possible latexes that would not have the claimed density and surface dielectric constants. These are real limitations that exclude many possible combinations of monomers (ratios, selection of monomers, etc.). In light of the above, the Applicant respectfully requests that the Examiner withdraw the present rejection.

Regarding claims 14 and 28, the Applicant notes that the Examiner has alleged that these specific amounts of non-volatile co-solvents would be obvious since Wang discloses “at least one water miscible cosolvent.” However, the Applicant submits that such disclosure does not provide the specific amounts recited in claims 14 and 28. Further, the Applicant submits that the Examiner has not provided any reason why one skilled in the art would use these specific amounts. Therefore, the Applicant submits that the present elements of claims 14 and 28 have not been disclosed.

In light of the above, the Applicant submits that the present rejection is improper and does not establish a *prima facie* case of obviousness. Therefore, the Applicant requests that the Examiner withdraw the present rejection.

*(4) Claims 12-16, 18, 23, 25-30, 32, 37, and 39-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wang in view of Miyabayashi*

Wang has already been summarized above, and that summary is incorporated herein. Miyabayashi teaches a microencapsulated pigment where pigment particles with an anionic group on the surface are coated with a polymer. Ink-jet inks including the microencapsulated pigment and water, and methods of printing with the ink-jet inks are taught. See Abstract. Miyabayashi also teaches that heating of printed matter may be necessary to accommodate polymers with high transition temperatures. See [0245]. Miyabayashi also does not disclose the use of a thermal ink-jet printer.

Claims 12-16, 18, 23, 25-30, 32, 37, and 39-44 have been rejected over Wang in view of Miyabashi. Specifically, the Examiner has used Miyabashi to provide the amount of crosslinking monomer recited in claims 18 and 32, which is not disclosed in Wang. However, as previously discussed above, Wang does not provide an ink composition having 1 wt% to 15 wt% of an acidic monomer containing latex in specific combination with a polymer-encapsulated pigment. Furthermore, the Applicant submits that Miyabashi does not correct the deficiencies of Wang, but rather, goes to another element without curing the other deficiencies. Thus, the Applicant renews the above arguments and requests the Examiner withdraw this rejection.

*(5) Claims 12-15, 18, 23, 25-29, 32, 37, and 39-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota in view of Hawley's Condensed Chemical Dictionary and either Kato or Moffatt*

Kubota teaches an ink composition with colorant, resin emulsion particles, water-soluble organic solvent, water and a reaction solution. The reference further discusses a recording method using the ink composition. See Abstract. Specifically, the recording method comprises the steps of depositing a reaction solution on the recording medium,

depositing an ink composition on the recording medium, and washing the recording medium. See [0025-0028]. Kubota does not teach the use of thermal ink-jet architecture.

Kato teaches compositions and methods for improving optical density and saturation by ink-jet recording. Kato teaches using a liquid composition with cationic micro-particles in combination with a separate anionic ink composition. An image can be formed by applying both the liquid composition and the anionic ink to a recording medium such that the two liquid compositions contact one another on the recording medium. See Abstract. It is also notable that Moffatt provides typical teachings as they relate to thermal printing, consistent with much taught in other prior

The Applicant notes that this rejection focused on the teachings of Kato for ink ejected on stable basis with no satellite dots produced as the basis for the combination. The Applicant notes that Kato's also discloses difficulties with ink-jetting, including regulating thermal properties of specific heat, thermal expansion coefficient, and thermal conductivity. Col. 26, lines 25-28. As noted in the present Application, configuring a system including thermal ink-jet architecture often requires additional consideration and experimentation of at least selection of ink components. To quote the disclosure,

As a further note, thermal ink-jet systems are quite different in their jetting properties than piezo ink-jet systems. As such, polymer colloid particulates that are effective for use in piezo ink-jet systems are not necessarily effective for use with thermal ink-jet ink systems. However, the converse is not necessarily true. In other words, polymer colloid particulates that work well with thermal ink-jet systems are more likely to work with piezo systems than *vice versa*. Therefore, the selection or manufacture of polymer colloid particulates for use with thermal ink-jet systems often requires more care, as thermal ink-jet systems are less forgiving than piezo ink-jet systems. p. 14, ln. 30 – p. 15 ln. 6.

Such warning regarding the difficulty in working with thermal ink-jet architecture is echoed by Kato's disclosure. Additionally, the Applicant notes that Kato does not deal with the combination of the ink components in a single fluid, as does the present invention. One of ordinary skill in the art would have no reason to combine the inks of Kubota with the thermal ink-jet architecture briefly noted in Kato. Additionally, the

Applicant submits that Moffatt does not provide any teachings contrary to Kato or the discussion of thermal printing in the present specification.

The Patent Office has further argued that it would have been obvious to use a thermal ink-jet system since the ink is identical to the Applicant's claimed ink; however, such reasoning is based on circular logic, i.e., hindsight. One skilled in the art would not necessarily conclude that the ink in Kubota would be thermally ink-jettable based on the fact that the Applicant has successfully provided a thermal ink-jet ink, since, but for the present disclosure, one skilled in the art would have no idea that the Applicant had provided the ink, or that such ink could be thermally ink-jetted.

The rejection further argued that Kubota does not require that the ink is used in a piezo ink jet system, and thus, one skilled in the art would assume the ink is suitable for thermal ink-jet printing. However, such an argument is flawed. The lack of disclosure regarding thermal printing would not lead one skilled in the art to believe that thermal ink-jet would be implied, but quite the opposite. In other words, one skilled in the art would know how difficult thermal ink-jet printing is and would most likely conclude that such a broad range of compositions as disclosed in Kubota would more likely be piezo ink-jettable. In other words, it is generally understood that thermal ink-jet inks can be jetted by piezo means, but the reverse is not always true.

Additionally, such a combination would not provide a reasonable expectation of success to one skilled in the art, as the selection or manufacture of components for use with thermal ink-jet systems often requires a much greater level of care than with other ink-jet systems.

The Patent Office responsively argues that Kato actually supports the combination. Specifically, the rejection argues that Kato's warning supports that one skilled in the art has the ability to make a thermal printable ink. See Final Office Action April 17, 2008, page 14. The Applicant cannot agree with such an interpretation. Kato provides no evidence that one skilled in the art would have the ability to make any ink thermally jettable; rather the Applicant maintains the position that Kato serves to warn one skilled in the art that not every ink-jet ink is thermally compatible, or can be made thermally compatible, as outlined in the present specification. Furthermore, the

Applicant notes the difficulty of thermal printing vs. piezo printing is well-known in the art. As such, the Applicant contends that using the ink from Kubota in a thermal printer from Kato would not be obvious to one skilled in the art at the time of the present invention.

Kubota fails to disclose printing of an ink-jet ink including polymer-encapsulated pigment colorant and acid-functionalized polymer colloid particulates dispersed in a liquid vehicle having a volatile co-solvent, where the image is heated after printing. For example, the ink composition referred in the rejection (Ink 4, Table F2) was not subjected to heating. Conversely, the only compositions where heating was utilized (Ink composition A, Color Ink Set A) did not comprise polymer-encapsulated pigments—rather, the pigments and dispersants were combined by mere mixing. See [0241]. These examples in Kubota provide no teaching, therefore, of the combination of elements claimed in the present independent claims 12 and 26. Kato does not remedy this deficiency and therefore the combination does not teach each and every element, and therefore fails to sustain a *prima facie* case of obviousness.

Even though the rejection alleges that one must look at what the reference teaches as a whole, including non-preferred portions, the Applicant maintains that the reference as a whole, including non-preferred portions, do not teach the combination of elements as presently claimed. The Applicant submits that Kubota discloses thousands of possible combinations and that the Patent Office has provided no reason for one skilled in the art to pick the Applicant's present combination, if possible, absent the Applicant's present disclosure.

The Applicant renews the above arguments with respect to dependent claims 41-44. Specifically, the Examiner has not showed the elements of these dependent claims in any reference. Additionally, as previously discussed, the cited characteristics are not inherent to the particulates but serve to limit that particulates covered by the independent claims. Absent inherency or any disclosure regarding the elements of density and surface dielectric constants, the Applicant submits that the Patent Office has not provided a combination of references that teach each and every element of those claims.



Regarding claims 13-14 and 27-28, the Applicant notes that the Examiner has alleged that these specific amounts of non-volatile co-solvents would be obvious since Kubota discloses the use of non-volatile co-solvents. However, the Applicant submits that such disclosure does not provide the specific amounts recited in claims 13-14 and 27-28. Further, the Applicant submits that the Examiner has not provided any reason why one skilled in the art would use these specific amounts. Therefore, the Applicant submits that the present elements of claims 13-14 and 27-28 have not been disclosed.

In light of the above, the Applicant submits that the present rejection is improper and does not establish a *prima facie* case of obviousness. Therefore, the Applicant requests that the Examiner withdraw the present rejection.

*(6) Claims 12-16, 18, 23, 25-30, 32, 37, and 39-44 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota in view of Hawley's Condensed Chemical Dictionary and either Kato or Moffatt and further in view of Miyamoto or Wang*

The Applicant renews the above arguments with respect to the present rejection. The Applicant submits that the present combination does not establish a *prima facie* case of obviousness for the reasons listed above. Further, the Applicant submits that neither Miyamoto nor Wang cure the deficiencies and incorporate the arguments with respect to the Wang reference as discussed above.

Additionally, The Applicant renews the above arguments with respect to dependent claims 41-44. Specifically, the Examiner has not showed the elements of these dependent claims in any reference. Additionally, as previously discussed, the cited characteristics are not inherent to the particulates but serve to limit that particulates covered by the independent claims. Absent inherency or any disclosure regarding the elements of density and surface dielectric constants, the Applicant submits that the Patent Office has not provided a combination of references that teach each and every element of those claims.

Regarding claims 14 and 28, in addition to Kubota, the Applicant notes that the Examiner has alleged that these specific amounts of non-volatile co-solvents would be obvious since Wang discloses "at least one water miscible cosolvent." However, the

Applicant submits that such disclosure does not provide the specific amounts recited in claims 14 and 28. Further, the Applicant submits that the Examiner has not provided any reason why one skilled in the art would use these specific amounts. Therefore, the Applicant submits that the present elements of claims 14 and 28 have not been disclosed.

In light of the above, the Applicant submits that the present rejection is improper and does not establish a *prima facie* case of obviousness. Therefore, the Applicant requests that the Examiner withdraw the present rejection.

**CONCLUSION**

In view of the foregoing, Applicants believe that all the presently pending claims present allowable subject matter and allowance is respectfully requested. If any impediment to the allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the Examiner is invited to telephone the undersigned attorney at (801) 566-6633 so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 08-2025.

Dated this 10<sup>th</sup> day of September, 2009.

Respectfully submitted,

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